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JOHNS HOPKINS UNIVERSITY CIRCULARS

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GENERAL STATEMENTS AS TO THE COURSES OF INSTRUCTION.

The Johns Hopkins University will commence its twenty-first year of instruction on October 1, 1896. The work will go forward in these divisions:

The Graduate department, in which arrangements are made for the instruction of advanced students in the higher studies of literature and science;

The Undergraduate or Collegiate department, in which students receive a liberal education leading up to the degree of Bachelor of Arts;

The Medical department, in which students who have already received a liberal education (including the modern languages and the natural sciences) are received as candidates for the degree of Doctor of Medicine, and in which Doctors of Medicine may attend special courses.

In other words, arrangements are made for the instruction of the following classes:

1. Graduate students and other qualified persons desiring to continue for one or more years their liberal education, and possibly to become candidates for the degree of Doctor of Philosophy.

2. Graduate students and other qualified persons wishing to proceed to the degree of Doctor of Medicine.

3. Doctors of Medicine who desire to follow special courses of lectures and laboratory work.

4. Undergraduates looking forward to the degree of Bachelor of Arts.

5. Special students who have not received an academic degree and are not candidates for a degree, but who desire to follow special courses of instruction in literature and science.

The medical department is open to women; the other departments are not.

A new academic building, called McCoy Hall, in commemoration of its donor, contains the library and the class-rooms in language, literature, history, and philosophy,—superseding the temporary structures hitherto in use.

Laboratories are provided in Chemistry, Physics, Electricity, Geology and Mineralogy, and in Biology, Anatomy, Physiology, Zoölogy, and Pathology.

Seminaries are organized in the Greek, Latin, French, German, English, Sanskrit, and Semitic languages, and also in History and Political Science. There are various scientific associations and journal clubs which hold regular meetings.

The Library contains seventy-seven thousand volumes, part of which are kept in the central reading-room, while the remainder of the books are distributed according to their subjects in the different laboratories and seminaries.

The Library of the Peabody Institute, which contains one hundred and twenty-five thousand volumes, is a most important addition to the attractions of Baltimore. These books are selected with reference to the wants of scholars in various departments. They are well chosen, well arranged, well bound, and well catalogued, and are accessible daily from nine in the morning until half-past ten in the evening. The Provost and librarians do all in their power to favor the studies of those who are engaged in scientific or literary work.

The proximity of Baltimore to Washington enables the students of this University to visit, at a very moderate expense, the libraries, museums, and scientific foundations of the Capital.

The academic year extends from the first of October to the fifteenth of June, with two recesses,—one at Christmas and one at Easter.

The charge for tuition is one hundred and fifty dollars per annum in the graduate and under-

graduate departments, and two hundred dollars in the medical department.

Board and lodging, including fire and light, may be had for six dollars per week. Many students pay less.

DANIEL C. GILMAN, *President of the Johns Hopkins University.*

PROGRAMMES FOR 1896-97.

The following courses in literature and science are offered for the academic year which begins October 1, 1896. They are open to properly qualified young men, according to conditions varying somewhat in each department. The Annual Register, giving full statements as to the regulations and work of the University, will be sent on application.

Separate announcements of the Medical Courses will be sent on application.

JOHN J. ABEL, *Professor of Pharmacology,*
courses in Pharmacology.

H. B. ADAMS, *Professor of American and Institutional History,*
(a) Historical Seminary.
(b) Early History of Institutions and Greek Politics, History of Prussia. History of Civilization.
(c) will direct undergraduate courses in History and Politics.

M. BLOOMFIELD, *Professor of Sanskrit and Comparative Philology,*
(a) Linguistic Science and Comparative Grammar.
(b) Indo-Iranian Languages.

J. W. BRIGHT, *Professor of English Philology,*
(a) English Seminary.
(b) English Philology, Anglo-Saxon and Middle English Texts, Anglo-Saxon.

W. K. BROOKS, *Professor of Zoölogy,*
(a) will direct the laboratory work in Biology.
(b) Principles of Zoölogy, Marine Zoölogy, Zoölogical Seminary.

WM. HAND BROWNE, *Professor of English Literature,*
courses in English Literature.

WM. B. CLARK, *Professor of Organic Geology,*
(a) will direct the laboratory work in Geology.
(b) General Geology, Palæontology, Historical Geology.

T. CRAIG, *Professor of Pure Mathematics,*
Mathematical Seminary, Partial Differential Equations, Theory of Surfaces.

A. M. ELLIOTT, *Professor of Romance Languages,*
(a) will conduct the Romance Seminary.
(b) will give advanced courses in the Romance Languages.

G. H. EMMOTT, *Professor of Roman Law and Comparative Jurisprudence,*
Historical and Comparative Jurisprudence, English Constitutional Law and History, Sources of English History.

B. L. GILDERSLEEVE, *Professor of Greek,*
(a) will direct the Greek Seminary (The Attic Orators).
(b) Practical Exercises in Greek.
(c) Greek Lyric Poetry.
(d) Greek Syntax, etc.

HERBERT E. GREENE, *Collegiate Professor of English,*
Rhetoric, English Composition, and English Literature.

E. H. GRIFFIN, *Professor of the History of Philosophy,*
(a) advanced courses in Modern Philosophy and Ethics.
(b) undergraduate courses in Logic, Psychology, and Ethics.

P. HAUPT, *Professor of the Semitic Languages,*
(a) will conduct the Assyrian Seminary.
(b) Biblical Philology, Hebrew, Ethiopic, Arabic.

W. S. HALSTED, *Professor of Surgery,*
courses in Surgery.

W. H. HOWELL, *Professor of Physiology,*
(a) will conduct the Physiological Seminary.
(b) courses in Physiology.

H. M. HURD, *Professor of Psychiatry,*
courses in Psychiatry.

H. A. KELLY, *Professor of Gynecology,*
courses in Gynecology.

FRANKLIN P. MALL, *Professor of Anatomy,*
courses in Anatomy.

H. N. MORSE, *Professor of Analytical Chemistry,*
(a) will assist in directing the Laboratory work in Chemistry.
(b) Analytic Methods, Chemistry of Carbon Compounds.

WM. OSLER, *Professor of Medicine,*
Principles and Practice of Medicine.

IRA REMSEN, *Professor of Chemistry,*
(a) will direct the Laboratory work in Chemistry.
(b) Selected Topics in Advanced Chemistry.
(c) General Chemistry, Compounds of Carbon.

EDWARD RENOUF, *Collegiate Professor of Chemistry,*
(a) will assist in the Laboratory work in Chemistry.
(b) Inorganic Chemistry.

H. A. ROWLAND, *Professor of Physics,*
(a) will direct the work of the Physical Laboratory.
(b) will lecture on Electricity and Magnetism.

MINTON WARREN, *Professor of Latin.*
Professor Warren will be absent during the year, acting as Director of American School of Classical Studies at Rome.

W. H. WELCH, *Professor of Pathology,*
(a) will direct the work of the Pathological Laboratory.
(b) Pathology and Bacteriology.

HENRY WOOD, *Professor of German,*
(a) will direct the German Seminary.
(b) Gothic, Old Norse, Modern German Classicism.
(c) will direct, with assistance, undergraduate courses in German.

W. D. BOOKER, *Clinical Professor of the Diseases of Children,*
courses in the Diseases of Children.

J. N. MACKENZIE, *Clinical Professor of Laryngology,*
courses in Laryngology.

S. THEOBALD, *Clinical Professor of Ophthalmology and Otology,*
courses in Ophthalmology and Otology.

H. M. THOMAS, *Clinical Professor of Diseases of the Nervous System.*
courses in Diseases of the Nervous System.

J. S. AMES, *Associate Professor of Physics,*
(a) undergraduate courses in General Physics.
(b) Theoretical Mechanics and Electrical Waves.
(c) Physical Seminary for advanced students.

- E. A. ANDREWS**, *Associate Professor of Biology*,
 (a) will assist in the Laboratory work in Biology.
 (b) General Biology and Embryology.
- A. S. CHESSIN**, *Associate Professor of Mathematics and Mechanics*,
 (a) Elementary Theory of Functions, Theoretical Mechanics.
 (b) Celestial Mechanics.
- L. DUNCAN**, *Associate Professor of Electricity*,
 courses in Applied Electricity.
- SIMON FLEXNER**, *Associate Professor of Pathology*,
 courses in Pathology.
- C. L. POOR**, *Associate Professor of Astronomy*,
 Theoretical and Practical Astronomy.
- A. RAMBEAU**, *Associate Professor of Romance Languages*,
 (a) French Phonetics and Pronunciation.
 (b) undergraduate courses in French and Italian.
- H. F. REID**, *Associate Professor of Geological Physics*,
 courses in Geological Physics.
- K. F. SMITH**, *Associate Professor of Latin*,
 (a) will conduct the Latin Seminary (Epic Poets).
 (b) Roman Epic Poets, Macrobius, and Lucan.
 (c) undergraduate courses in Latin.
- SIDNEY SHERWOOD**, *Associate Professor of Political Economy*,
 (a) Economic Seminary, Advanced Economic Research, Principles of Economics, Transportation.
 (b) undergraduate courses in Political Economy.
- E. H. SPIEKER**, *Associate Professor of Greek and Latin*,
 undergraduate courses in Greek.
- J. M. VINCENT**, *Associate Professor of History*,
 (a) The Reformation and Puritan Revolution, Historical Conference.
 (b) European History, Mediaeval and Modern History.
- J. WHITRIDGE WILLIAMS**, *Associate Professor of Obstetrics*,
 courses in Obstetrics.
- L. F. BARKER**, *Associate in Anatomy*,
 courses in Anatomy.
- H. J. BERKLEY**, *Associate in Neuro-Pathology*,
 courses in Neuro-Pathology.
- G. P. DREYER**, *Associate in Biology*,
 (a) will assist in the Laboratory work in Biology.
 (b) Animal Physiology and Histology.
- J. M. T. FINNEY**, *Associate in Surgery*,
 courses in Surgery.
- H. G. GEER**, *Associate in Mechanical Engineering*,
 Mechanics of Engineering, Mechanical Drawing.
- T. C. GILCHRIST**, *Associate in Dermatology*,
 courses in Dermatology.
- H. S. HERING**, *Associate in Electricity*,
 courses in Applied Electricity.
- L. S. HULBURT**, *Associate in Mathematics*,
 (a) Synthetic Geometry, Theory of Substitutions.
 (b) undergraduate courses in Mathematics.
- C. JOHNSTON**, *Associate in Semitic Languages*,
 Hebrew, Assyrian, Arabic, and Syriac.
- J. W. LORD**, *Associate in Dermatology and Instructor in Anatomy*,
 courses in Dermatology.
- E. B. MATHEWS**, *Associate in Mineralogy*,
 (a) will assist in the Laboratory work in Geology.
 (b) courses in Mineralogy and Petrography.
- L. E. MENDER**, *Associate in Romance Languages*,
 courses in Italian and Old French.
- C. W. E. MILLER**, *Associate in Greek*,
 (a) will assist in the work of the Greek Seminary.
 (b) undergraduate course in Greek.
- W. W. RANDALL**, *Associate in Chemistry*,
 (a) will assist in the work of the Chemical Laboratory.
 (b) Physical Chemistry.
- R. L. RANDOLPH**, *Associate in Ophthalmology and Otology*,
 courses in Ophthalmology and Otology.
- W. S. THAYER**, *Associate in Medicine*,
 courses in Medicine.
- B. C. STEINER**, *Associate in History*,
 American Constitutional and Political History.
- B. J. VOS**, *Associate in German*,
 (a) Middle High German, Old High German Prose, Old Saxon.
 (b) undergraduate courses in German.
- B. W. BARTON**, *Lecturer in Systematic Botany*,
 undergraduate course in Botany.
- J. E. HUMPHREY**, *Lecturer in Botany*,
 Vegetable Morphology.
- THOMAS S. BAKER**, *Instructor in German*,
 (a) Modern German Literature, 1830-1850.
 (b) undergraduate courses in German.
- ABRAHAM COHEN**, *Instructor in Mathematics*,
 (a) Theory of Invariants.
 (b) undergraduate courses in Mathematics.
- F. DE HAAN**, *Instructor in Romance Languages*,
 Old French Readings, Spanish.
- A. B. FAUST**, *Instructor in German*,
 (a) History of the Modern German Novel.
 (b) undergraduate courses in German.
- J. E. GILPIN**, *Instructor in Chemistry*,
 will assist in the work of the Chemical Laboratory.
- J. H. HOLLANDER**, *Instructor in Economics*,
 (a) Municipal Finance, Economic Development of Baltimore, Economic Thought before Adam Smith.
 (b) Recent Economic Changes, Money and Taxation.
- H. C. JONES**, *Instructor in Physical Chemistry*,
 Physical Chemistry, Electro-chemistry.
- G. C. KEIDEL**, *Assistant in Romance Languages*,
 Carolingian Epic.
- C. C. MARDEN**, *Instructor in Romance Languages*,
 Spanish and French.
- S. E. WHITEMAN**, *Instructor in Drawing*,
 courses in Drawing.
- H. L. WILSON**, *Instructor in Latin*,
 undergraduate courses in Latin.

In addition to the courses mentioned above, lectures are given from time to time by non-resident lecturers. Among others, the persons named below will give courses in 1896-97:

Before the students of History and Politics:

Professor **E. R. L. GOULD**, of the University of Chicago,
 on Municipal Sociology.

Professor **JAMES SCHOUER**, of Boston University,
 on the Principles of Common Law.

Dr. **W. W. WILLOUGHBY**, of Washington, D. C.,
 on the Federal State and the History of Political Philosophy.

Professor **WOODROW WILSON**, of Princeton University,
 on Comparative Politics.

Before the students of Geology:

Sir **ARCHIBALD GEIKIE**, of the Geological Survey of Great Britain,
 on the Principles of Geology.

Mr. **G. K. GILBERT**, of the U. S. Geological Survey,
 on Physiographic Geology.

Mr. **BAILEY WILLIS**, of the U. S. Geological Survey,
 on Stratigraphic and Structural Geology.

Before the students of Romance Languages:

Professor **F. M. WARREN**, of Adelbert College,
 on French Literature.

MATHEMATICS AND ASTRONOMY.

The instruction will be given during the next session by Professor CRAIG, Associate Professors CHESSIN and POOR, Dr. L. S. HULBURT, Dr. A. COHEN, and such other instructors as may be required.

MATHEMATICS.

In advanced mathematics the courses below named, intended for graduate students, will be given:—

Professor CRAIG.

1. Partial Differential Equations of the first and second orders with applications to Geometry.
Three times weekly, through the year.
2. Theory of Surfaces and lines traced on surfaces.
Three times weekly, through the year.
3. Mathematical Seminary.
Weekly, through the year.

The membership of the Mathematical Seminary is composed of the Director, the Fellows and Scholars in Mathematics, and such of the graduate students as show by their ability or attainments that they can profit by the Seminary work. This is partly pedagogical, partly historical, but for the most part consists in the development of topics assigned by the Director in his lectures. Each member of the Seminary is required to take part in the work, and at least once during the year to make a report on some important memoir or treatise which shall be assigned to him for review by the Director.

Dr. CHESSIN.

1. Elementary Theory of Functions.
Twice weekly, through the year.
2. Theoretical Mechanics.
Twice weekly, through the year.

Dr. HULBURT.

1. Synthetic Geometry.
Three times weekly, first half-year.
2. Theory of Substitutions.
Three times weekly, second half-year.

Dr. COHEN.

1. Theory of Invariants.
Twice weekly, through the year.

The Undergraduate Courses will go forward as follows:

MAJOR COURSE (SECOND YEAR).

Determinants.

Four times weekly, until October 16.

Differential and Integral Calculus (special topics).

Four times weekly, October 19 to December 23.

Elementary Theory of Equations.

Four times weekly, January 4 to February 15.

Modern Analytic Geometry of Two Dimensions.

Four times weekly, February 15 to April 1.

Analytic Geometry of Three Dimensions.

Four times weekly, April 1 to end of year.

MINOR COURSE (FIRST YEAR).

Analytic Geometry.

Four times weekly, until December 23.

Differential and Integral Calculus.

Four times weekly, January 4 to end of year.

FOR CANDIDATES FOR MATRICULATION.

Algebra (special topics); Solid Geometry; Plane Trigonometry; Analytic Geometry (straight line and loci).

Four times weekly, through the year.

Differential Equations: Elective course for undergraduates in their third year.

Twice weekly, through the year.

ASTRONOMY.

The instruction in Astronomy is given under the direction of Dr. CHARLES L. POOR, Associate Professor of Astronomy, who conducts the work in Theoretical and Practical Astronomy. Associate Professor CHESSIN conducts the courses in Celestial Mechanics.

The courses are so arranged as to meet the wants of different classes of student, from those just beginning the study to those already prepared to carry on advanced work. For training students in the use of instruments, the University has erected a small observatory and supplied it with the following instruments:

An equatorial telescope of 9½ inches aperture, with clock-work and filar micrometer.

A meridian circle of 3 inches aperture, with circles 2 feet in diameter reading to seconds.

A small meridian transit instrument.

A sidereal clock, chronograph, etc.

A reflecting circle by Pistor and Martins.

An astronomical theodolite, and several other small instruments.

Students are required to make and reduce observations and to keep full records of the same; in fact, so far as possible, to do the routine work that would be required in an observatory.

Dr. CHESSIN offers the following course:
Celestial Mechanics.

Three times weekly, through the year.

This course will deal mainly with the theory of general perturbations, of which the principal methods will be developed, with the view of conveying to the student a general and clear idea of the subject without going into details of practical applications. After developing the older methods in celestial mechanics, as full an account as is possible will be given of the more recent researches of Gylden, Poincaré, and others. The course will also deal with the development of functions in series and the integration of the general differential equations of dynamics.

Dr. POOR offers the following courses:

1. Computation of Orbits and Ephemerides.

Three times weekly, first half-year.

The methods of computing and correcting orbits will be fully developed, and special attention will be given to the practical application of the various formulas derived.

2. Special Perturbations.

Three times weekly, second half-year.

The methods of computing the perturbations of the elements and of the rectangular coordinates will be developed and the students trained in their applications. Hansen's method will be briefly outlined.

3. A General Course in Theoretical and Practical Astronomy.

Twice weekly, through the year.

This course is intended for those commencing the subject, and for those taking Astronomy as a subsidiary subject for the degree of Ph. D. It will embrace the elements of spherical astronomy, the theory and use of astronomical instruments, the use of the ephemeris, elementary gravitational astronomy, the history of astronomy, and the first principles of the method of least squares.

4. Astronomical Computations.

Weekly, through the year.

The students will be exercised in the actual computation of ephemerides, comet orbits, the correction of orbits, etc.

5. Astronomical Seminary.

Bi-weekly, through the year.

6. Practical Work with the Instruments.

Daily, through the year.

Dr. POOR offers a course in General Astronomy to undergraduates.

Twice weekly, through the year.

This is an elective course for third-year students. It embraces an historical sketch of the development of the science, and an outline of the present state of our knowledge of the constitution and motions of the celestial bodies. The use of the principal instruments is explained, and some practice is had with the equatorial.

PHYSICS.**(Including Applied Electricity.)****Advanced Courses.***Lectures.*

Professor ROWLAND will lecture on—

Electricity and Magnetism.

Four hours weekly, through the year.

These lectures constitute one-half of a complete course, which extends through two years. In the year 1897-98, the lectures will be on Thermodynamics, Heat Conduction, and Physical Optics.

Dr. AMES will direct the *Physical Seminary*, which meets once a week through the year for the consideration of special subjects, and to which only the most advanced students are admitted, and will lecture on—

Theoretical Mechanics.

Two hours weekly, first half-year.

Electrical Waves.

Two hours weekly, second half-year.

These lectures are designed to be introductory to Professor Rowland's course, and students should take them during their first graduate year.

For all the advanced lectures a thorough knowledge of analytic geometry of three dimensions and of differential equations is necessary.

Laboratory Work.

Graduate students are expected to give as much of their time as possible to laboratory work. This consists at first in performing experiments which are designed to familiarize them with laboratory methods and with the use of instruments for exact measurements. When sufficient experience of this kind has been acquired, they undertake, under the guidance of the instructors, some research designed to be of permanent value.

Journal Meetings.

The instructors meet once a week with the advanced students for the reading and discussion of the current physical journals.

Among the journals on which reports are regularly given are the following: The Philosophical Magazine, The American Journal of Science, The Physical Review, The Astrophysical Journal, Wiedemann's Annalen and Beiblätter, Zeitschrift für physikalische Chemie, Journal de Physique,

Annales de Chimie et de Physique, Nature, Comptes Rendus, London Electrician, the Proceedings of the Royal Society of London and of many other societies.

Collegiate Courses.

These courses are adapted to undergraduates and to those graduate students who wish to extend their knowledge of Physics, but are not prepared for more advanced work.

First Year (Minor Course.)

1. Lectures and recitations on General Physics.

Four hours weekly, through the year. Dr. AMES.

2. Laboratory Work.

Three hours weekly, through the year.

This course does not assume that the student has had any previous acquaintance with physics; but he is supposed to know how to use logarithms and to have had thorough instruction in plane trigonometry.

Second Year (Major Course.)

1. Lectures and recitations on the following subjects:

Mechanics, including some simple problems in the motion of rigid and elastic bodies.

Elementary Thermodynamics.

Electricity and Magnetism.

Physical Optics.

Four hours weekly, through the year. Dr. AMES.

2. Laboratory Work.

Five hours weekly, through the year.

This course presupposes at least one year's previous work in physics and an accurate knowledge of analytic geometry of two dimensions and the calculus.

The laboratory work of both courses accompanies the lectures throughout the year, and is largely quantitative, being designed to impress the principles of the subject and to impart experimental skill. In the second year, therefore, problems presenting greater difficulties, either experimental or theoretical, are assigned. Written reports of the work are required of all the students.

Applied Electricity.

The work in Applied Electricity is intended to give the students such a knowledge of the subject, as will fit them to understand and appreciate the latest discoveries in electrical science, and to apply these to the practical electrical problems of the day. Especial attention is given to the electrical transmission of energy, electric traction, and alternating current work.

The course includes lectures, extending through two years, on theoretical and applied electricity, electrical measurements, steam and hydraulic engineering, central station equipment, machine design, mechanics of engineering, and practice in mechanical drawing. An important feature is laboratory work, to which much attention is paid, and original investigation is especially encouraged. The course is primarily intended for college graduates.

The instruction is given by HENRY A. ROWLAND, Ph. D., Professor of Physics; LOUIS DUNCAN, Ph. D., Associate Professor of Electricity; HERMANN S. HERING, M. E., Associate in Electricity; and HERBERT G. GEER, M. E., Associate in Mechanical Engineering.

Students who have received the degree of Bachelor of Arts on completing the mathematical-physical group in this University, are admitted without examination. Graduates of other colleges

are not examined for admission, but they must satisfy the instructors that they are prepared to take the course.

Candidates for admission must have completed the major and minor courses of this University (or their equivalents elsewhere) in physics and mathematics, the minor course in chemistry, and the course in freehand and instrumental drawing; and must be able to read either French or German. Those who have not had all this preparatory training, must follow the courses in which they are deficient; only one of these may be taken simultaneously with the regular work of the course.

Persons, not college graduates, who wish to complete their preparation for the work in Applied Electricity, may be admitted to the requisite undergraduate courses, on passing an entrance examination covering the matriculation requirements in the following subjects: mathematics, French or German (first division), English, United States history, and the elements of one of the following branches of science—chemistry, botany, or physical geography. They will then follow for two years the preparatory courses in mathematics, physics, chemistry, and drawing above indicated.

A certificate of proficiency is given to those students who complete the prescribed course in a satisfactory manner and who possess a knowledge of *both* French and German.

First Year.

Electricity and Magnetism.

Four times weekly, through the year. Professor ROWLAND.

This course is given every other year, and will be taken, according to circumstances, in either the first or the second year.

Applied Electricity.

Three times weekly, through the year. Dr. DUNCAN.

Lectures and examples on so much of the physical and mathematical theory of electricity and magnetism as is considered useful for application.

Electrical Measurements.

Twice weekly, through the year. Mr. HERING.

Lectures and recitations on the general methods of performing experiments and conducting tests, in which the fundamental measurements in electricity and magnetism and tests of electrical machinery are considered.

Electrical Seminary.

Weekly, through the year. Professor ROWLAND, Dr. DUNCAN, Mr. HERING, and Mr. GEER.

At these meetings the students of both classes review current electrical literature and present carefully prepared papers upon special topics in connection with their studies or their laboratory work.

Mechanics of Engineering.

Twice weekly, through the year. Mr. GEER.

Lectures and problems upon the strength of engineering materials, kinematics of machinery, and machine design, with especial reference to structural strength, arrangement, and utility of electrical machinery.

Mechanical Drawing.

Six hours weekly, through the year. Mr. GEER.

Machine sketches, precise representation and detail drawing of electrical machinery. Kinematical problems solved graphically and machine parts inserted. Shop drawings of machine details from original designs. Tracing and blue-printing.

Laboratory Work.

Nine hours weekly. Dr. DUNCAN and Mr. HERING.

Exercises are given in fundamental experiments: the measurement of electro-motive force, current, resistance, self and mutual induction, capacity, hysteresis, permeability, etc., tests of batteries, dynamos, motors, incandescent and arc lamps, etc. The work is largely individual, and the character and grade of the work given to the student is determined by his qualifications.

Second Year.

Electricity and Magnetism.

Four times weekly, through the year. Professor ROWLAND.

This course is given every other year, and will be taken in either the first or the second year, according to circumstances.

Applied Electricity.

Twice weekly, through the year. Dr. DUNCAN.

Theory and design of dynamos and motors, transmission of energy, electric traction, telephone and telegraph, alternating apparatus, etc.

Electrical Seminary.

Weekly, through the year. Professor ROWLAND, Dr. DUNCAN, Mr. HERING, and Mr. GEER.

Steam and Hydraulic Engineering.

Three times weekly, through the year. Mr. GEER.

Lectures and examples upon steam engines and other heat motors (Fall term); steam boilers and accessories (Winter term); water power, water motors, and pumps (Spring term).

Central Station Equipment.

Twice weekly, second half-year. Mr. HERING.

Lectures and examples on the design, equipment and testing of electrical power stations, illustrated by personal inspection of large plants in operation and under construction.

Electro-chemistry and Electro-metallurgy.

About twenty lectures, second half-year. Dr. H. C. JONES.

Lectures on the wandering velocities of the ions, conductivity of solutions of electrolytes, calculation of the electromotive force of elements, and the more important methods employed in electro-metallurgy.

Mechanical Drawing.

Six hours weekly, through the year. Mr. GEER.

Design and arrangement of parts, assembly and detail drawings of special problems as assigned during the first part of the year, and of dynamos and Central Stations, etc., prepared largely from the original designs of the students.

Laboratory Work.

Professor ROWLAND, Dr. DUNCAN, Mr. HERING, and Mr. GEER.

The students are given original problems to work out in the laboratory, and experiments and investigations in alternating currents and transmission plants form an important part of the work. Encouragement will be given for the undertaking of original research.

Some time is devoted to work in steam engineering, including indicator practice, standardizing apparatus, calorimetry, hydraulics, etc.; and engine and boiler trials and tests of the University power plant are made.

CHEMISTRY.

The courses in Chemistry are intended to meet the wants (1) of graduate students who make Chemistry their specialty, or who select it as one of their subordinate subjects for the degree of Doctor of Philosophy; and (2) of undergraduate students who study Chemistry for general training. The first and second year's courses cover the ground of General Chemistry, as far as it is possible to do so in the time occupied. Together they form the full course designed for undergraduates. Graduates who have not done an equivalent amount of work, will follow such parts of these courses as may seem desirable.

The Chemical Laboratory is well equipped and will conveniently accommodate about two hundred students.

Advanced Work for Graduate Students.*Laboratory.*

Under the direction of Professors REMSEN and MORSE. *Daily, except Saturday, from 9 a. m. to 5 p. m.*

The work will consist in a thorough study of analytic methods, in making typical preparations especially of compounds of carbon, and in carrying on investigations.

Lectures.

(a) Selected Topics, by Professor REMSEN. *Twice weekly, until Christmas.*

(b) Compounds of Carbon, by Professor REMSEN. *Four times weekly, from January 1 to the end of the year.*

(c) Analytic Methods, by Professor MORSE. *Once weekly, through the year.*

(d) The Principles of Physical Chemistry, by Dr. RANDALL. *Twice weekly, until Christmas.*

(e) Special Course in Physical Chemistry, by Dr. JONES.

(f) Special Topics, under the direction of the Professor of Chemistry, by advanced students. *Ten to twelve lectures, second half-year.*

This work, while serving to familiarize students with chemical literature, is intended to aid them in acquiring the art of presenting subjects in the form of lectures before audiences. All those who intend to become teachers of Chemistry are expected to take active part in the work.

(g) *Journal Meetings.*—The instructors and advanced students will meet weekly, on Saturdays from 9 to 10.30 a. m., and at such other hours as may be appointed, for the purpose of hearing reports on the principal articles contained in the journals of Chemistry.

The reports are furnished in turn by all who attend the meetings. The journals read and regularly reported on are: *Annalen der Chemie*, *Berichte der deutschen chemischen Gesellschaft*, *Journal of the Chemical Society (London)*, *Journal für praktische Chemie*, *Zeitschrift für analytische Chemie*, *Zeitschrift für physikalische Chemie*, *American Chemical Journal*, *Journal of the Society of Chemical Industry*, *Bulletin de la Société chimique*, *Annales de Chimie et de Physique*, *Zeitschrift für anorganische Chemie*, and occasionally others.

Collegiate Courses.*First Year (Minor) Course.*

(a) Introduction to General Chemistry.

Lectures and examinations four times weekly, through the year, by Professor REMSEN, Professor RENOUF, Dr. RANDALL, and Dr. GILPIN.

(b) Laboratory Work.

Five to six hours weekly, through the year, under the direction of Professor RENOUF, Dr. RANDALL, and Dr. GILPIN.

Second Year (Major) Course.

(a) Chemistry of the Compounds of Carbon.

Four times weekly, from January 1st to the end of the year, by Professor MORSE.

(b) Advanced Inorganic Chemistry.

Four times weekly, until Christmas, by Professor RENOUF.

(c) Laboratory Work.

Five to six hours weekly, through the year, under the direction of Professor RENOUF.

GEOLOGY.

The Instruction in Geology is under the direction of Dr. WM. BULLOCK CLARK, Professor of Organic Geology, assisted by Dr. HARRY FIELDING REID, Associate Professor of Geological Physics, Dr. EDWARD B. MATHEWS, Associate in Mineralogy and Petrography, and Dr. RUFUS M. BAGG, Assistant in Geology. A course in map-drawing and coloring will be offered by Mr. HERBERT G. GEER, Associate in Mechanical Engineering. Important courses of lectures will be given by Mr. G. K. GILBERT, of the United States Geological Survey, Lecturer upon Physiographic Geology, and by Mr. BAILEY WILLIS, also of the United States Geological Survey, Lecturer upon Stratigraphic and Structural Geology. The George Huntington Williams Memorial Lectureship upon the Principles of Geology will be inaugurated during the coming session by Sir ARCHIBALD GEIKIE, Director-General of the Geological Survey of Great Britain and Ireland.

The courses in Geology, which are offered to both graduate and undergraduate students, consist of lectures, laboratory and field work, and conferences upon topics of current literature. Great importance is attached to laboratory training as a part of the geological course, and facilities are given for daily work from 9 a. m. to 5 p. m.

Commodious rooms have been recently fitted up in Hopkins Hall for the uses of the geological department, and there will be found the books, apparatus, and collections relating to Geology.

LECTURE COURSES.

1. General Geology, by Professor Clark and Associate Professor Reid. *Four times weekly.*

2. Paleontology, by Professor Clark. *Twice weekly.*

3. Historical Geology, by Professor Clark. *Twice weekly.*

4. Geological Physics, by Associate Professor Reid. *Twice weekly.*

5. Mineralogy, by Dr. Mathews. *Four times weekly.*

6. Petrography, by Dr. Mathews. *Three times weekly.*

7. Geological Drawing, by Mr. Geer. *Once weekly.*

8. Physiographic Geology, by Mr. Gilbert. *Twice weekly, for three months.*

The subject of the course is the origin of the forms of the earth's surface, and its treatment will include the systematic presentation of a large body of the principles of dynamic geology, especially those which apply to the sculpture of the land by the various processes of erosion. During the coming session this course will be given in January, February, and March.

9. Stratigraphic and Structural Geology, by Mr. Willis. *Twice weekly, for three months.*

This course is a sequel to that by Mr. Gilbert. It will consist of a description of the processes which result in the formation and upheaval of sedimentary rocks. The mechanics of rock folding and thrusting will be illustrated both by actual sections and by experimental results. The whole course will lead to a discussion of the principles which should govern the interpretation of the sedimentary record. Lectures will be given during January, February, and March.

10. Principles of Geology (the George Huntington Williams Memorial Lectureship), by Sir Archibald Geikie.

These lectures will be given in the spring of 1897.

LABORATORY WORK.

Laboratory courses are arranged to accompany the lectures, while advanced or special students will be given the opportunity to carry on fuller investigations upon either described or new materials.

FIELD WORK.

The area of the State of Maryland includes, notwithstanding its comparatively small size, a remarkably perfect sequence of all the geological formations. The most ancient rocks which make up the earth's crust, as well as those still in the process of deposition, are here found, while between these wide limits there is hardly an important geological epoch which is not represented. As a result, most excellent facilities are afforded for a study of the various geological horizons.

During the autumn and spring, excursions are made Saturdays into the surrounding country, the crystalline areas and the various Cretaceous and Tertiary formations being readily accessible. More extensive excursions are made from time to time into the early Mesozoic and Paleozoic areas of the western portion of the State and into the highly fossiliferous Tertiary region of the lower Chesapeake Bay.

CONFERENCES AND STUDENT LECTURES.

In order that the advanced students may be kept in touch with the most recent investigations in the science, conferences are held at which the leading journals in geology are reviewed by the students under the direction of the instructors. The conferences take place bi-weekly.

That the experience necessary for the successful preparation and delivery of class-room lectures may be gained, a course upon some phase of geology is arranged for, a special topic being assigned to each student. The lectures of this course take place bi-weekly, alternating with the conferences.

LIBRARY AND COLLECTIONS.

The Library of the department contains a good representation of the leading journals and works of reference upon geological subjects. It is greatly enriched by the libraries of the late Professor George H. Williams and Professor H. Carvill Lewis. Extensive series of topographical and geological maps likewise form a portion of the library, and these are constantly increasing in number.

In addition to libraries belonging to the University, the Peabody Library, rich in geological works, is available for the use of students, while books not obtainable in Baltimore may be readily consulted in the libraries of Washington.

The collections of the department consist primarily of a large amount of important material brought together from Maryland and adjacent States. It represents all the horizons of the State, being especially rich in crystalline rocks and in Cretaceous and Tertiary fossils. Some of this material has been already described, while much awaits further study.

Important collections are the following: Williams collection of rocks and minerals, Lewis collection of rocks and thin sections, Krantz collection of European fossils, Hill collection of Texas rocks and fossils, Allen collection of minerals, Stüertz collection of European rocks, Lehman collection of Saxon rocks.

STATE SCIENTIFIC BUREAUS CONNECTED WITH THE
GEOLOGICAL DEPARTMENT.

Two scientific bureaus, which have been established by the Legislature and are maintained at the expense of the State, are

carried on in connection with the Geological Department. They are the *Maryland Geological and Economic Survey*, and the *Maryland State Weather Service*. Professor Clark is in charge of both these organizations, which are concerned with a study of the geology and physical features of the State of Maryland.

BIOLOGY.

The courses in Biology are designed (1) for students who wish to make Zoölogy or Animal Physiology or Botany a subject of advanced study and research, or the principal or a subordinate subject for the degree of Doctor of Philosophy; (2) for graduates in medicine who desire a laboratory course in Physiology; (3) for undergraduates who desire some knowledge of the biological sciences as part of a liberal education; and (4) for undergraduates who desire to prepare themselves for the study of medicine.

The biological laboratory will be open daily during the session, except on Saturdays, from 9 a. m. to 5 p. m. The work goes forward under the direction of Professors BROOKS and HOWELL, Dr. ANDREWS, Dr. DREYER, Dr. HUMPHREY and Dr. BARTON.

The marine laboratory is open for part of the year at some place on the sea-shore selected on account of its natural advantages for out-of-door study of animal life, and for the collection of material for original research in zoölogy, comparative anatomy, and embryology.

Graduate Courses.

For advanced students:

1. Professor Brooks will conduct the following courses:

Principles of Zoölogy.

Three times weekly, from January 1 to April 1.

Advanced lectures in Zoölogy, by instructors and fellows.

Weekly, from January 1 to April 1.

Zoölogical Journal Club.

Weekly, to April 1.

Marine Zoölogy.

Daily, from April 1 to July 1.

Zoölogical Seminary.

Weekly, from the beginning of the session until April 1.

2. Professor Howell will conduct the following courses:

Animal Physiology.

Four times weekly, throughout the year, with twelve weeks of laboratory work, five hours a week.

This course is designed for the students in the medical school, but it, or an equivalent, will be required of students taking graduate work in animal physiology as a subsidiary subject for the Ph. D. degree.

Physiological Seminary.

Weekly, throughout the year.

Physiological Journal Club.

Weekly, throughout the year, for the discussion of current journals.

Advanced laboratory work in Physiology (methods of demonstration and research).

Arranged for those who have completed the elementary course in animal physiology. The work is done individually and not in class.

3. Dr. Andrews will conduct a course in Embryology during the winter.
4. Dr. Humphrey will lecture twice weekly throughout the year on Vegetable Morphology.

Herbaria.

Captain John Donnell Smith, of Baltimore, has kindly consented to allow students to avail themselves of the opportunities offered in his private herbarium, which includes some 78,000 sheets of specimens from all parts of the world, and which is especially rich in its representation of the Flora of the United States and of the American tropics. He has also offered to special students the privilege of consulting his extensive botanical library.

Students of Botany have access also to the Schimper collection of European phanerogams, the Fitzgerald collection of mosses, and the local collections of the Baltimore Naturalists' Field Club.

Library Facilities.

The laboratory contains a library supplied with standard biological works and complete sets of the more important journals.

The general library of the University receives all the chief journals of general science, and the transactions of the leading learned societies of the world.

The library of the Peabody Institute, within five minutes' walk of the University, contains complete sets of many of the chief biological journals, of the proceedings of learned societies, and other works of reference.

In the libraries of the Medical and Chirurgical Faculty of Maryland and the Johns Hopkins Hospital a large number of medical periodicals are accessible to members of the University.

Publications.

The University Circulars provide for the prompt publication of abstracts of researches or parts of researches as soon as they are completed and ready for publication, and one number of the Circulars is, each spring, devoted to notes from the laboratory.

The Studies from the Biological Laboratory have provided, in the past, for the publication of researches which have not required elaborate illustrations.

From time to time more extensive and elaborate memoirs have been issued by the University Press in a series of illustrated quarto Morphological Monographs.

Collegiate Instruction.

The regular undergraduate instruction in normal biology extends over two years. The first year constitutes a *minor course* and may be taken separately. It must be taken by those who wish to enter the medical school.

Special students, who are not graduates or matriculates, may enter the courses for undergraduates, on giving satisfactory evidence of fitness.

First Year or Minor Course. (Biology A.)

This introductory course in General Biology consists of five hours' laboratory work and four lectures or exercises weekly. It will be conducted chiefly by Dr. ANDREWS.

The subjects studied in the laboratory are: the life phenomena of certain animals and plants; the human skeleton; the elements of the embryology of the frog and the fowl; and the elements of botany.

Attention is directed to the broad characteristic phenomena of life and living things, rather than to the minutiae of descriptive botany or zoölogy, or to the characters of orders, genera, and species. In the laboratory the student learns how to observe, how to verify and describe what he observes, how to dissect, and how to use a microscope; he examines selected vegetable and animal types from unicellular organisms, such as the yeast-plant and Amoeba, to the fern and the flowering plant on one side and to the crayfish and a mammal on the other. In the lecture room attention is mainly given to the fundamental biological facts and laws which the particular plant or animal under consideration is fitted to illustrate, the object

being rather to give the student an idea of what is meant by the terms living thing, plant, animal, tissue-differentiation, life-history, organ, function, natural classification, evolution, development, etc., than to teach him the elements of Botany and Zoölogy as frequently understood.

The instruction in Botany is given by Dr. BARTON in April and May. In addition, an elementary course in Botany is open to any student as a part of the course in freehand drawing.

Second Year or Major Course. (Biology B.)

The work of the second year consists of three practically separate courses planned as an introduction to the principles and methods of Physiology, Zoölogy, and Embryology.

1. Elements of Zoölogy.

Four lectures weekly and five hours of laboratory work, until January 1. Professor BROOKS.

2. Animal Physiology and Histology.

Four lectures weekly and five hours of laboratory work, from January 1 to April 1. Dr. DREYER.

This course is intended to give the outlines of general animal physiology and histology. Attention is directed first to the structure and fundamental physiological properties of animal tissues. This is followed by a brief study of organs and physiological mechanisms, mainly as they occur in the mammalia, but with more or less extended references to similar organs in other animals, invertebrate as well as vertebrate.

3. Elements of Comparative Embryology.

Four lectures weekly and five hours of laboratory work, from April 1 to the end of the session. Dr. ANDREWS.

GREEK.**GREEK SEMINARY.**

Professor GILDERSLEEVE will conduct the Greek Seminary, the plan of which is based on the continuous study of some leading author or some special department of literature.

The Seminary consists of the Director, Fellows, and Scholars, and such advanced students as shall satisfy the Director of their fitness for an active participation in the work by an essay, a critical exercise, or some similar test of attainments and capacity. All graduate students however, may have the privilege of attending the course.

During the next academic year the study of The Attic Orators will constitute the chief occupation of the members. There will be two meetings a week during the entire session. Especial attention will be paid to the development of language and style and to the antique canons of aesthetic criticism. The rhetorical works of Dionysios of Halikarnassos will be studied in connection with this course.

The student should possess the text of the orators (Teubner ed.), and the rhetorical works of Dionysios of Halikarnassos, Vols. V and VI of the Tauchnitz (Holtze ed.). Blass's *Geschichte der Attischen Beredsamkeit* is an indispensable auxiliary, Volkmann's *Rhetorik* will be found serviceable, and Jebb's *Selections from the Attic Orators* may be recommended as an introduction to the study.

ADVANCED AND GRADUATE COURSES.

1. Professor Gildersleeve will also conduct a course of Practical Exercises in Greek, consisting chiefly in translation at dictation from Greek into English and English into Greek, two meetings a week, from the beginning of the session to the first of January.

2. He will lecture on Greek Lyric Poetry, with illustrative readings, once a week after January 1.

3. He will also lecture on the Hypotactic Sentence, in continuation of the course on Greek Syntax in its relation to style.

Notice of other courses is reserved.

UNDERGRADUATE COURSES.

Associate Professor SPIEKER will conduct the following courses :

1. Lysias (Select Orations).

Three times weekly, first half-year.

Private Reading: Xenophon, *Hellenica*, I.

2. Homer, *Odyssey* (four books); Euripides (one play).

Three times weekly, second half-year.

Private Reading: Plato, *Apology*.

3. Thucydides (one book).

Three times weekly, first half-year.

Private Reading: Aeschylus (one play).

4. Selections from the elegiac, melic, and iambic poets; Sophocles (one play).

Three times weekly, second half-year.

Private Reading: Aristophanes (one play).

5. Elective Course: Aristophanes, *Frogs*.

Twice weekly, first half-year.

6. Prose Composition.

Weekly exercises in connection with courses 1, 2, 3, 4.

FOR CANDIDATES FOR MATRICULATION.

Homer, *Iliad* (Book VI); Herodotus (Book VII); Sight Reading; Prose Composition.

Three times weekly. Dr. MILLER.

L A T I N .

Latin Seminary.

The Latin Seminary will be conducted by Dr. KIRBY F. SMITH, Associate Professor of Latin.¹ The Latin Epic Poets, more especially Vergil, will form the centre of work during the next academic year. There will be two meetings a week, throughout the entire session, devoted to critical interpretation, to various auxiliary studies, and to the presentation of papers prepared by members of the Seminary.

Students are advised to provide themselves in advance with a text edition of Vergil, including the *Carmina Minora* (Ribbeck, 2nd ed., 8vo, Teubner, Leipzig, 1894-5); of Macrobius (Eysenhardt, 2nd ed., Teubner, 1893); of Lucan (Hosius, Teubner, 1892); and of Baehrens' *Fragmenta Poetarum Romanorum* (Teubner, 1886).

Advanced and Graduate Courses.

1. During the first half-year Professor Smith will give a course of lectures on the Roman Epic Poets from Ennius to Vergil, once a week.

2. During the second half-year Professor Smith will give a course of lectures on the Roman Epic Poets from Vergil to Claudian, once a week.

¹ Professor Warren will be absent during the year, acting as Director of the American School of Classical Studies at Rome.

3. During the first half-year Professor Smith will read Macrobius with a class, once a week.

4. During the second half-year Professor Smith will read Lucan with a class, once a week.

5. A Journal Club will meet regularly to report on current philological periodicals containing articles of interest to Latinists.

The schedule above given is subject to additions and modifications.

Undergraduate Courses.

1. Livy (two books).

Three times weekly, first half-year. Dr. WILSON.

Private Reading: Caesar, *Bellum Civile* (book i); Quintus Curtius (book iii).

2. Horace (selections).

Three times weekly, second half-year. Dr. WILSON.

Private Reading: Horace, *Ars Poetica*; Selections from Phaedrus.

3. History of Roman Literature (with reading at sight of selected passages).

Once a week, through the year. Professor SMITH.

4. Catullus; Tibullus.

Three times weekly, first half-year. Dr. WILSON.

Private Reading: Propertius.

5. Terence, *Phormio*; Plautus, *Captivi*.

Three times weekly, second half-year. Dr. WILSON.

Private Reading: Plautus, *Miles Gloriosus*.

6. Cicero, *De Senectute*; Sallust, *Catilina*. (For Candidates for Matriculation.)

Three times weekly, first half-year. Dr. WILSON.

7. Ovid, *Amores* and *Tristia*; Vergil, *Georgics* (selections). (For Candidates for Matriculation.)

Three times weekly, second half-year. Dr. WILSON.

8. Prose Composition.

Weekly exercises in connection with courses 1, 2, 4, 5, 6, 7. Professor SMITH and Dr. WILSON.

9. Selections from Martial and Petronius: Elective Course.

Twice weekly, second half-year. Professor SMITH.

ORIENTAL SEMINARY.

Biblical Philology.

1. History of Israel (Lectures).

Professor HAUPT and Dr. JOHNSTON. *Wednesday, 5 p. m., during the first half-year.*

2. The Literature of the Old Testament (Lectures).

Professor HAUPT and Dr. JOHNSTON. *Wednesday, 5 p. m., during the second half-year.*

3. Elementary Hebrew.

Professor HAUPT and Dr. JOHNSTON. *Wednesday, 3-5 p. m.*

4. Hebrew (Second Year's Course): Cursory Reading of the Books of Samuel.

Dr. JOHNSTON. *Weekly, through the year.*

5. Exercises in Reading Hebrew at Sight.

Dr. JOHNSTON. *Weekly, through the year.*

6. Hebrew Prose Composition.

Professor HAUPT. *Tuesday, 5 p. m.*

7. Comparative Hebrew Grammar.

Professor HAUPT. *Monday, 5 p. m.*

8. Hebrew (Advanced Course): Critical Interpretation of Mes-
sianic Psalms.

Professor HAUPT. *Monday, 3 p. m., during the first half-year.*

9. Hebrew (Advanced Course): Critical Interpretation of the
Minor Prophets.

Professor HAUPT. *Monday, 3 p. m., during the second half-year.*

10. Post-Biblical Hebrew (Pirgê Abôth and Yômâ, ed. Strack ;
Selections from the Talmud).

Mr. ROSENAU. *Two hours weekly, through the year.*

11. Biblical Aramaic Grammar and Interpretation of the Books
of Daniel and Ezra.

Professor HAUPT. *Monday, 4 p. m.*

Syriac and Ethiopic.

12. Syriac (Roediger's Chrestomathy).

Dr. JOHNSTON. *Weekly, through the year.*

13. Ethiopic (The Book of Baruch).

Professor HAUPT. *Tuesday, 3 p. m.*

Arabic.

14. Arabic for Beginners.

Dr. JOHNSTON. *Weekly, through the year.*

15. Exercises in Reading Arabic at Sight.

Dr. JOHNSTON. *Weekly, through the year.*

16. Arabic Prose Composition.

Professor HAUPT. *Tuesday, 5.30 p. m.*

17. Arabic Geographers.

Dr. JOHNSTON. *Weekly, through the year.*

Assyriology.

18. Assyrian for Beginners.

Dr. JOHNSTON. *Two hours weekly, through the year.*

19. Cursory Reading of Selected Cuneiform Texts.

Dr. JOHNSTON. *Weekly, through the year.*

20. Sumerian Hymns and Psalms.

Professor HAUPT. *Tuesday, 5 p. m.*

SANSKRIT AND COMPARATIVE PHILOLOGY.

The following courses, in charge of Professor BLOOMFIELD, may
be stated under two heads :

A. Indo-Iranian Languages.

1. Vedic Seminary : The hymns and practices of the Atharva-
Veda.

Weekly (1½ hours), through the year.

The study of this Veda of private antiquities and popular customs is
peculiarly timely owing to the numerous recent publications bearing upon
the subject. The first two volumes (quarto) of Sâyapa's commentary on the
hymns of the Atharvan, covering the first ten books of the Veda, are now
available in the scholarly Bombay edition of the late Shankar Pandurang
Pandit. Professor Henry's French translation of books vii-xiii are in hand.
Not an inconsiderable part of the total work on this Veda has been done at
this University, beginning with Professor Bloomfield's edition of the Kau-
çika-Sûtra, the ritual book of the Atharvan, and continuing with numerous
contributions to the interpretation and literature of this Veda by Bloomfield,
Fay, Goodwin, Hatfield, and Magoun. An elaborate translation, with com-
mentary, of the most important parts of the Veda by Professor Bloomfield
is now passing through the press as one of the volumes of the Sacred Books
of the East, published by the Clarendon press at Oxford under the editor-
ship of Professor Max Müller; it will be available either in its published

form or in proof-sheets, for the work of the Seminary. The complete
critical apparatus, together with a translation of the entire Veda, from the
pen of the late Professor Whitney, may also be expected before the close of
the session.

2. The language and literature of the Avesta (advanced course).
Weekly, through the year.

3. Readings in the Hitopadeça, Kathâsaritsâgara, and Manu.
(Second year's course in classical Sanskrit.)

Twice weekly, first half-year.

4. The drama Çakuntala with an introduction to the Prâkrit
dialect. (Second year's course in classical Sanskrit, continued.)

Weekly, second half-year.

5. Introduction to the Elements of Vedic Philology.

Weekly, second half-year.

6. Elementary course in Sanskrit : grammar and interpretation
of an easy text.

Twice weekly, through the year.

- B. Linguistic Science and Comparative Grammar of the Indo-
European Languages.*

7. The Elements of Linguistic Science, with an introductory
account of the Ethnology of the Indo-European peoples.

Weekly, through the year.

8. Comparative Grammar of Greek, Latin, German, and San-
skrit : The History of the Consonants.

Weekly, through the year.

No knowledge of Sanskrit is required for either of the two courses under
B. The first sketches briefly the history of the Science of Language ; pre-
sents a concise account of the ethnological history of the Indo-European
peoples ; deals with the fundamental questions of change in language ; and
finally treats of the origin of language. It is designed to outline the gen-
eral principles in the scientific study of language. The second course is
intended as an introduction into the most elementary methods and results of
the comparative grammar of the more prominent Indo-European languages.

ENGLISH.

A.

Professor BRIGHT will conduct the following courses :

I.

English Seminary.

Graduate students are admitted to the Seminary as soon as they
have satisfied initial requirements for independent research. The
work of the seminary is directed towards a two fold end : the
thorough study of some literary period, or of some department of
literature extending through successive periods, of the works of
a significant author or group of authors, and training in scholarly
methods of dealing with linguistic and literary subjects.

The following subjects will be studied : (a) Middle English
Romances (selected groups), and some of the minor themes in
Middle English Poetry (*first half-year*) ; (b) English Poetry
during the second half of the eighteenth century (*second half-
year*).

The meetings of the Seminary will occupy four hours a week.
Tuesday and Thursday, 3-5 p. m.

II.

Lectures on English Grammar (the history of sounds and in-
flections from Anglo-Saxon to Modern English, with a preliminary
course on the Elements of Phonetics). *Wednesday, 4 p. m.*

III.

A class in the interpretation of Anglo-Saxon and Middle English texts. *Thursday, 12 m.*

The class will begin with the *Poema Morale* (*Das mittelenenglische Poema Morale*, ed. by Hermann Lewin, Halle, Max Niemeyer, 1881), and continue with the Anglo-Saxon *Gûðlûc* (*The Exeter Book*, ed. by I. Gollancz, Early English Text Society, No. 104).

IV.

Lectures and Conferences on selected topics in Literature and Grammar. *Tuesday, 12 m.*

V.

The English Journal Club (*fortnightly, two hours*), for reports on the current journals, reviews of new books, and the presentation and discussion of original papers on linguistic and literary subjects.

VI.

An introductory course in Anglo-Saxon, with Bright's Anglo-Saxon Reader as the text-book. *Monday and Wednesday, 12 m.*

B.

Professor BROWNE will give the following courses in English Literature:

VII.

A general course covering the whole field, from the 7th to the 19th century. The study, of course, is synoptical; but emphasis is laid upon the chief writers and most important periods. Morley's *Manual* (Tyler's edition) is used as a text-book. *Wednesday and Thursday, 1 p. m.*

VIII.

A course in the writers of the 12th, 13th, and 14th centuries (from the Peterborough Chronicle to Chaucer). The texts are read from Morris and Skeat's *Specimens*, the students beginning with the easier and proceeding to the more difficult. In addition to the knowledge thus acquired of an interesting and formative period of our literature, this introduction to the early forms of the language will be found a helpful prodromus to the study of Anglo-Saxon. *Monday and Tuesday, 1 p. m.*

IX.

A course in the writers of the Elizabethan period. The origin and development of the English drama will be traced from its earliest recorded beginnings down to Shakespeare, the representative of its highest perfection, and in its decadence in the later Jacobean dramatists. *Tuesday and Friday, 12 m., first half-year.*

X.

A course in the literature of the first half of the 19th century, illustrating the Romantic and Revolutionary influences. *Tuesday and Friday, 12 m., second half-year.*

XI.

The Early Scottish Poetry from Barbour (A. D. 1350) to Lyndsay (A. D. 1550) will be studied by the aid of a chrestomathy especially prepared for this class. A course of historical and critical lectures will be given concurrently with the readings.

XII.

A course of lectures, for advanced students, on the "classical" period of English literature. *Wednesday, 11 a. m.*

C.

Professor GREENE will give the following courses in Rhetoric and in English Literature:

XIII.

A course of lectures, for advanced students, on the History and Theory of Rhetoric, including a discussion of methods of teaching Rhetoric. *Weekly, October to March.*

XIV.

Rhetoric and English Composition. Theory, based upon textbooks, lectures, and discussions; critical study of prose writers; frequent practice in writing. *Monday, Tuesday and Wednesday, 12 m.*

XV.

English Literature. Outline history, with special study of the more important writers. *Monday, 9 a. m., Tuesday, 10 a. m., Wednesday, 11 a. m.*

XVI.

Special study of the literature of the eighteenth and nineteenth centuries. *Twice weekly.*

NOTE.—Courses I-V, XII, and XIII are for graduate students.

Courses VII and VIII constitute the "English Minor," and VI, IX, X, and XI, the "English Major," of Group VII.

Course XIV is prescribed for all college students during their first year; XV is prescribed for the second year; and XVI is elective in the third year.

GERMAN.

German Seminary.

The German Seminary will be conducted by Professor WOOD. The subject for the first half-year will be Goethe's *Faust*. In the study of the First Part, beginning with the 'Urfaust,' the questions of conception and composition of the drama will be considered, in chronological order, from the point of view of Goethe's development. The Second Part will be interpreted in selected portions, and Goethe's drafts of particular scenes and of the uncompleted plot will be considered, together with the *Paralipomena*. During the second half-year the *Parzival* of Wolfram von Eschenbach will be studied. The third, fifth, and ninth books, with other selected passages, will be read, and Wolfram's relation to the Grail legend discussed. Particular attention will be paid to the epic style in *Parzival*, as compared with *Titarel* and with *Willehalm*. The Seminary will meet three times weekly, through the year.

Students are requested to procure von Loeper's edition of Goethe's *Faust*; Goethe's *Faust in ursprünglicher Gestalt*, by Erich Schmidt, 2d edition; *Paralipomena zu Faust*, and *Wörterbuch zu Faust*, both by Fr. Strehlke, Stuttgart, 1891. For *Parzival*, Lachmann's fourth edition (Berlin, 1880) will be used.

The Germanic Society, which is composed of the Director of the Seminary, the Instructors, and the Graduate Students in German, will meet fortnightly in an evening session. The members report upon the contents of current journals, and present, in turn, papers upon subjects connected with the work of the year, or assigned for investigation.

Graduate Courses.

Professor WOOD will conduct the following courses:

1. Gothic and the Elements of Comparative German Grammar. *Twice weekly, through the year.*

Braune, *Gotische Grammatik*, 4. Auflage, Halle, 1895; Streitberg, *Urgermanische Grammatik*, Heidelberg, 1896; G. H. Balg, *The First Germanic Bible*, 1891; F. Kluge, *Etymologisches Wörterbuch der deutschen Sprache*, 5. Auflage, Strassburg, 1894.

2. Old Norse. *Twice weekly, through the year.*

A. Noreen, *Altnordische Grammatik*, I. 2. Auflage, Halle, 1892; Möbius, *Analecta Norroena*, 2. Ausgabe, Leipzig, 1877; *Laxdaela Saga*, hrsg. von Kr. Kålund, Halle, 1896; Möbius, *Altnordisches Glossar*, Leipzig, 1866.

3. The Beginnings of Modern German Classicism. *Twice weekly, first half-year.*

The period in German Literature from 1750 to Goethe's Italian Journey (1786) will be studied. The authors to receive the chief share of attention will be Wieland, Lessing, and Herder.

Dr. B. J. VOS, Associate in German, will give the following courses:

4. Middle High German. *Twice weekly, first half-year.*

Paul, *Mittelhochdeutsche Grammatik*, 4. Auflage, Halle, 1894. *Kudrun*, hrsg. B. Symons, Halle, 1883. F. Vogt, *Mittelhochdeutsche Litteratur* (Paul's Grundriss, II. Bd. 1. Abteilung, 1893).

5. Old High German. *Twice weekly, first half-year.*

Braune, *Althochdeutsche Grammatik*, 2. Auflage, Halle, 1891. Braune, *Althochdeutsches Lesebuch*, 3. Auflage, Halle, 1888. Piper, *Die älteste deutsche Litteratur*.

6. Old Saxon. *Twice weekly, second half-year.*

Gallée, *Altsächsische Grammatik*, Halle, 1891. Heyne, *Kleine altniederdeutsche Denkmäler*, 2. Auflage, Paderborn, 1877.

Dr. A. B. FAUST will give a course on

7. The History and Development of the Modern German Novel. *Weekly, through the year.*

Wilhelm Meister. The Romanticists. Foreign influences (Scott; the historical and exotic romance). The national and realistic novel.

Dr. T. S. BAKER will conduct the following course:

8. Das Junge Deutschland. *Weekly, through the year.*

The relation of Political to National Literature, from 1830 to 1850.

Undergraduate Courses.**Elementary Course.**

Class Work. *Three times weekly.* Dr. VOS.

Thomas, *Practical German Grammar*; Buchheim, *German Reader*, Part I; Heyse, *L'Arrabbiata*; Fouqué, *Undine* (von Jagemann).

This course is intended for candidates for matriculation who have offered Greek.

Minor Course A.

1. Classics. *Twice weekly.*

Section I: Schiller, *Maria Stuart*; Goethe, *Hermann und Dorothea*. Dr. VOS.
Section II: Goethe, *Götz von Berlichingen*; Schiller, *Wilhelm Tell*. Dr.

BAKER.

2. Prose Readings. *Weekly.*

Section I: Chamisso, *Peter Schlemihl*; Seidel, *Novellen*. Dr. VOS.

Section II: Meyer, *Georg Jenatsch*; Immermann, *Der Oberhof*. Dr. BAKER.

3. History of German Literature; Prose Composition. *Weekly.* Professor WOOD.

4. Private Readings.

Section I: Lessing, *Emilia Galotti*; Gutzkow, *Zopf und Schwert*.

Section II: Freytag, *Doktor Luther*; Gutzkow, *Zopf und Schwert*.

Minor Course B.

Class Work. *Four times weekly.* Dr. FAUST.

Otis, *Elementary German*; Brandt, *German Reader*; von Moser, *Der Bibliothekar*; Goethe, *Edmont*; Prose Composition (E. S. Buchheim, *Elementary German Prose Composition*, Oxford, 1893); Whitney, *German Grammar*.

Minor Course B is intended only for students who have matriculated in Greek. For undergraduates in Group I, it absolves the requirements in German. Those following any of the other groups must take, in addition to Minor B, the Supplementary Minor Course.

Supplementary Minor.

Class Work. *Twice weekly.* Dr. BAKER.

Freytag, *Die Journalisten*; Heine, *Die Harzreise* (ed. Buchheim); Buchheim, *Deutsche Lyrik*.

Private Readings.

Major Course.

1. Drama. *Twice weekly.*

Goethe, *Faust*. Professor WOOD. Lessing, *Nathan der Weise*. Dr. VOS.

2. History of German Literature: Readings. *Weekly.* Dr. VOS.
W. Scherer, *History of German Literature*, 2 vols., New York, 1886.

3. Prose Composition. *Weekly.* Dr. FAUST.

C. A. Buchheim, *Materials for German Prose Composition*, Parts I and II, London, 1894. Wilmanns, *Deutsche Schulgrammatik*, 2. Teil.

4. Private Readings.

Elective Courses.

1. Contemporary Literature, in Rapid Readings. *Twice weekly.* Dr. BAKER.

Works by Sudermann, Ebner-Eschenbach, and von Wildenbruch will be read.

This course is intended for students who have completed the equivalent of a Minor.

2. German Conversation. *Weekly.* Dr. FAUST.

Special Courses.

Courses 1 and 2 are open to graduate students who already possess an elementary knowledge of German, and wish to acquire greater fluency in reading. The first is intended for students in Languages, History, and Economics; the second, for students in the Natural Sciences. Successful completion of either course is accepted as an equivalent of the reading knowledge of German required of candidates for the degree of Doctor of Philosophy.

1. Historical German Prose. *Twice weekly.* Dr. FAUST.

Schoenfeld, *Historical Prose*; Hermann Grimm, *Albrecht Dürer*, 2. Auflage, Berlin, 1873.

2. Scientific German. *Twice weekly.* Dr. BAKER.

Dippold, *Scientific German Reader*; von Helmholtz, *Über Goethe's naturwissenschaftliche Arbeiten*.

3. Oral Exercises in German. *Weekly.* Dr. FAUST.

Meissner, *German Conversation*.

This course is intended especially for students in the departments of modern languages, who lack an extended vocabulary and sufficient familiarity with written and spoken German. A thorough knowledge of the elements is presupposed.

ROMANCE LANGUAGES.**Advanced Courses.**

I. With second and third year students:

Professor ELLIOTT.

(a). Seminary. *Twice weekly.*

The Fables of Marie de France; Work on Manuscripts.

(b). French Dialects. *Weekly.*

(c). Lectures on Dante. *Weekly.*

(d). Romance Club. *Weekly.*

Dr. KEIDEL.

- (e). The Carolingian Epic. *Weekly.*

G. Paris, *Litt. Franç. au Moyen Age* (2d. ed.); L. Gautier, *Les Épopées Françaises*, 4 vols.; P. Rajna, *Origini dell' Epopea Francese*; K. Nyrop, *Storia dell' Epopea Francese*. (Ital. trans.)

Mr. THIEME.

Treatment of the principal poets of the Romantic and Parnassian schools, with special examination of their versification. *Weekly.*

Dr. MENDER.

- (f). Origins of Italian Prose. *Weekly.*

Preliminary reading required: Gaspary, *Letteratura Italiana*, Vol. I, Chap. VIII; Bartoli, *Ibid.*, Vol. III; Casini, *Ibid.*, Vol. III, 302, ff; D'Ancona e Bacci, *Ibid.*, Vol. I.

- (g). Readings in Early Italian Prose. *Weekly.*

Il Novellino (ed. Carbone); *Conti di Antiehi Cavalieri* (ed. Fanfani); *Il Libro dei Sette Savi* (ed. D'Ancona); *Libro di Cuto* (ed. Vanucci); *La Composizione del Mondo* (ed. Narducci).

- (h). Italian Philology. *Twice weekly.*

Meyer-Lübke, *Italianische Grammatik*; Stoppato, *Fonologia Italiana*; Gorra, *Morfologia Italiana*.

Dr. MARDEN.

- (i). The Poema de Fernan Gonzalez (*Spanish Seminary*). *Weekly.*
A linguistic study of the poem based on the Escorial manuscript.

- (j). Spanish Philology. *Twice weekly.*

Gröber, *Grundriss der Romanischen Philologie*, Vol. I; Meyer-Lübke, *Grammaire des Langues Romanes*, Vols. I, II; Keller, *Altspanisches Lesebuch*.

- (k). Old Spanish Readings. *Weekly.*

Restori, *Le Gesta del Cid*; Duran, *Crónica Rimada*; Janer, *Vida de Santo Domingo de Silos*, *Libro de Cantares del Arcipreste de Hita*; Gayangos, *Libro de Patronio*, *Libro de los enziemplos*.

Dr. DEHAAN.

- (l). Cervantes. *Weekly.*

Navarrete, *Vida de Cervantes*, Madrid, 1819. *Obras de Cervantes* (B. Aut. Esp., Vol. I).

- (m). Provençal. *Weekly.*

Bartsch, *Chrestomathie Provençale*.

II. With first year students :

Professor ELLIOTT.

- (a). Popular Latin. *Weekly.*

Dr. RAMBEAU.

- (b). Phonetics and French pronunciation, with practical exercises. Especially adapted to the needs of teachers. *Weekly, second half-year.*

Dr. MENDER.

- (c). Old French Philology. *Three hours weekly.*

Schwan, *Grammatik des Altfranzösischen*; Suchier, *Le Français et le Provençal*, *Altfranzösische Grammatik*; Étienne, *Grammaire historique de la langue française*.

- (d). French Physiological Phonetics. *Weekly.*

Passy, *Étude sur les Changements Phonétiques*; Beyer, *Französische Phonetik*; Vietor, *Elemente der Phonetik* (1894); Sweet, *Primer of Phonetics*.

- (e). Modern Italian Literature. *Weekly, second half-year.*

Dr. DEHAAN.

- (f). Old French Readings. *Twice weekly.*

Bartsch et Horning, *La Langue et la Littérature Françaises*; Paris, *Extraits de la Chanson de Roland* (1893); Koschwitz, *Voyage de Charlemagne*; Suchier, *Aucassin et Nicolette*; Warnke, *Die Lais der Marie de France*; Foerster, *Cligès*; Foerster, *Yvain*.

- (g). The Spanish Novel of the Nineteenth Century. *Weekly.*

Professor F. M. WARREN.

- (h). French Lyric Poetry. *Twenty lectures in the month of February, 1897.*

- (i). The Modern French Drama. *Twenty lectures.*

Undergraduate Courses.

Dr. RAMBEAU.

French: *Second Year (Major) Course.**

1. Outline of the History of French Literature from the beginnings to the XIXth century,—especially the XVIIth century. Rapid reading of Corneille, Racine, and especially Molière. *Twice weekly.*
2. The Romantic Movement.
Victor Hugo, *Notre-Dame de Paris*, *Ruy Blas*; Modern Lyrics: Béranger, Lamartine, Victor Hugo, Alfred de Musset, and other poets. *Weekly.*
Private reading to be announced later.
3. Prose Composition.
Study of idioms and original essays with reference to subjects and authors read in the class. *Weekly.*

French: *First Year (Minor) Course: * Class A.*

1. Short outline of the History of French Literature (XVII–XIX centuries), and reading of Contes, Novels, and Dramas.
Contes de Daudet, ed. Cameron; Mérimée, *Colomba*; Molière, *Le Bourgeois gentilhomme*; Hugo, *Hernani*. *Twice weekly.*
2. Modern French Comedy.
Labiche, *La Cagnotte*; Augier and Sandeau, *Le Gendre de M. Poirier*; Sandeau, *Mademoiselle de la Seiglière*. *Weekly.*
Private reading to be announced later.
3. Prose Composition and Syntax.
Whitney's Grammar, Part II, and Exercises based on *Le Siège de Berlin* and *La Belle Nivernaise*, ed. Grandgent and Kimball. *Weekly.*

Dr. MARDEN.

French: *First Year (Minor) Course: Class B.*

Whitney's *Brief French Grammar*; Drill in Grammar and Composition; Grandgent's Exercises based on Super's *French Reader*; Super's *French Reader*; Dumas, *L'Évasion du Duc de Beaufort*; Mérimée, *Colomba*; Augier, *Le Gendre de M. Poirier*.
For undergraduates who have matriculated in Greek, and for graduates beginning French. *Four hours weekly.*

French: *Elementary Course.*

Grandgent's *Short Grammar and Exercises* based on Super's *French Reader*; Super's *French Reader*; Hugo, *La Chute*; De Vigny, *Le Cachet Rouge*.
For candidates for matriculation. *Three hours weekly.*

Dr. RAMBEAU.

Italian: *Minor Course. Four hours weekly.*

Grandgent's Italian Grammar and Composition.

Fornaciari, *Sintassi italiana*; Fenini, *Letteratura italiana* (Hoepli); Guarnerio, *Manuale di versificazione italiana*.

De Amicis, *Novelle*; Verga, *Vita dei Campi*; Capuana, *Homo!*; Serao, *All'erta, sentinella!*; Carducci, *Odi barbare*.

In the second term a play of Maffei and of Alfieri, and selections from Tasso's *La Gerusalemme liberata* and Dante's *Divina Commedia* will be read.

Dr. MENDER.

Italian: *Elective Course. Twice weekly.*

Del Testa, *L'Oro e l'Orpello*; De Amicis, *Alberto, Camilla*; Farina, *Fra le Corde d'un Contrabbasso*; Barrili, *La Donna di Picche*; Verga, *Caratteristica Rusticana*; Capuana, *Homo!*

*These courses (Minor A and Major) include exercises in French pronunciation, recitation, and conversation, and oral and written reports on subjects connected with the class-work and private reading.

Dr. DEHAAN.

Spanish: *Minor Course. Four hours weekly.*

Texts will be announced later.

Spanish Readings. *Twice weekly.*

HISTORY, POLITICS, AND ECONOMICS.

HISTORY.

Professor HERBERT B. ADAMS:

1. Historical Seminary.
Alternate Friday evenings. For graduates only.
2. Early History of Institutions and Greek Politics.
Two hours weekly, first half-year. For graduates.
3. History of Prussia.
Two hours weekly, second half-year. For graduates.
4. History of Civilization.
Two hours weekly, through the year. Designed for undergraduates, open to graduates.

Associate Professor J. M. VINCENT:

1. The Reformation.
Two hours weekly, first half-year. For graduates.
2. The Puritan Revolution.
Two hours weekly, second half-year. For graduates.
3. Historical Conference, for the study of practical problems in historical research.
Two hours fortnightly, through the year.
4. European History.
Two hours weekly, through the year. Part of Major History.
5. Mediaeval and Modern History.
Two hours weekly, through the year. Part of History-Economics course.

Associate BERNARD C. STEINER:

American Constitutional and Political History.
Two hours weekly, through the year.

Greek History.

Two hours weekly, through the year.

Roman History.

Two hours weekly, through the year.

LAW.

Professor GEORGE H. EMMOTT:

1. Historical and Comparative Jurisprudence.
Two hours weekly, through the year. For graduates and law students.
2. English Constitutional Law and History.
Two hours weekly, through the year. College course open to graduates and law students.
3. Sources of English History.
One hour weekly, through the year. For graduates.

Professor JAMES SCHOUER:

Twenty-five lectures on the Principles of Common Law.
Daily, beginning in January.

POLITICS.

Professor WOODROW WILSON:

Twenty-five lectures on Comparative Politics.
Daily, beginning in February.

Dr. W. W. WILLOUGHBY:

1. Federal State in Theory and Practice.
Two hours weekly, first half-year.

2. History of Political Philosophy.

Two hours weekly, second half-year.

ECONOMICS.

Associate Professor SIDNEY SHERWOOD:

1. Economic Seminary.
Alternate Friday evenings. For graduates.
2. Class in Research and Criticism.
Two hours weekly, through the year. For graduates.
3. Principles of Economics.
Two hours weekly, first half-year. For graduates.
4. Transportation.
Two hours weekly, second half-year. For graduates.
5. Recent Economic Theories.
Two hours weekly, second half-year. Designed for undergraduates, open to graduates.
6. Elements of Economics.
Two hours weekly, first half-year. Part of History-Economics course.

Professor E. R. L. GOULD:

1. Six lectures on Problems in Municipal Sociology: (1) The liquor problem: Its rational treatment. (2) Popular recreation. (3) Housing the poor. (4) Care of the unemployed. (5) The Church and the masses. (6) Civic reform and social progress.
Two hours weekly, beginning in January.
2. Social Treatment of Dependents, Defectives, and Delinquents.
Two hours weekly, beginning in February.

Dr. J. H. HOLLANDER:

1. Municipal Finance.
Two hours weekly, first half-year. For graduates.
2. Economic Thought before Adam Smith.
Two hours weekly, second half-year. For graduates.
3. Economic Development of Baltimore.
Weekly conference, through the year.
4. Recent Economic Changes.
Two hours weekly, first half-year. Designed for undergraduates, open to graduates.
5. Money and Taxation.
Two hours weekly, second half-year. Part of History-Economics course.
6. History of Economic Thought. Transportation and the Tariff.
Two hours weekly, through the year. For undergraduates.

PHILOSOPHY.

The undergraduate courses in Philosophy provide five hours per week of required work for one year, under the direction of Professor GRIFFIN.

(a) Deductive and Inductive Logic.

Attention will be given to the general theories of Deduction and Induction; to the forms of thought—*notion, judgment, and reasoning*; to the application of the rules of the syllogism and the detection of fallacies; and to the various methods of scientific investigation and proof.

The topics treated will include the following:

- (1). Province and definition of logic.
- (2). The forms of thought: *notion, judgment, reasoning*:
 - (a) Terms and their various kinds.
 - (b) The various kinds of propositions or judgments; *opposition and conversion*.
 - (c) Mediate inference or syllogism.
 - (d) Fallacies.
- (3). Methods of scientific investigation and proof.

(4). Fallacies incident to induction.

The work will consist of short informal lectures, recitations, themes, epitomes, etc.

Reference Books: Jevons's Elementary Lessons in Logic, Fowler's Elements of Inductive Logic, with selected passages from the larger works of Jevons, and from the works of Mill, Bain, Venn, Keynes, and other recent writers.

(b) Psychology.

The instruction in psychology is intended to give a general view of the results of the new methods of study, the recent investigations in regard to the quality and intensity of sensations, the duration of psychic acts, etc.,—in general, the subjects treated in Part II of Ladd's Physiological Psychology—being presented with sufficient detail to render them intelligible and interesting. A series of lectures and demonstrations on the anatomy and physiology of the nervous system—given in 1895-96 by Dr. L. F. Barker—is included in the course.

Especial emphasis is laid upon the facts of conscious experience as known through introspection, the most important end to be secured being, it is believed, such an understanding of the facts and laws of mental life as shall fit one for wise self government and effective influence. With this view, such powers and states of mind as attention, memory, association, habit, imagination, the feelings, the will, are discussed in as concrete and practical a way as possible. A text-book is used as the basis of instruction, but this is largely supplemented by informal lectures, and by references to various authorities. One essay on an assigned subject is required from each member of the class.

Reference Books: Baldwin's Elements of Psychology, Sully's Human Mind, James's Psychology, Höffding's Outlines of Psychology, Dewey's Psychology, Hamilton's Lectures on Metaphysics, Porter's Human Intellect, Spencer's Principles of Psychology, Ladd's Physiological Psychology.

(c) Ethics.

The fundamental problems of ethics and the application of moral principles to the guidance of conduct and the formation of a manly character are considered with special reference to the Christian theory of morals. The great historic systems—hedonism, utilitarianism, intuitionism—and the relation to ethical theory of the doctrine of evolution are discussed with the purpose of enabling the student to reach a just and intelligent view of the grounds and nature of moral obligation. But, while keeping to a scientific basis, the aim is to make the instruction of a directly practical nature, and to show the bearing of the problems considered upon questions of practical ethics.

The subject is taught by lectures, recitations from a text-book—Fowler's Principles of Morals, Part II, being used at present—and references to the works of the most important writers. One essay is required from each member of the class.

Reference Books: Calderwood's Handbook of Moral Philosophy, Janet's Elements of Morals and Theory of Morals, Martineau's Types of Ethical Theory, Sidgwick's Methods of Ethics, Stephen's Science of Ethics, Martensen's Christian Ethics, Smyth's Christian Ethics, Sidgwick's History of Ethics.

An outline of the History of Philosophy.

Weekly, through the year.

For next year the following advanced courses in Philosophy are offered:

1. Modern Philosophy from Descartes to Kant.

Weekly, through the year. Professor GRIFFIN.

2. Modern Ethical Theories.

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JOHNS HOPKINS MEDICAL SCHOOL.

The session begins October 1 and extends to June 15.

STAFF.

<i>Anatomy</i>	{ F. P. MALL, M. D., Professor. L. F. BARKER, M. B., Associate. J. W. LORD, M. D., Instructor.
<i>Physiology</i>	{ W. H. HOWELL, Ph. D., M. D., Professor. G. P. DREYER, Ph. D., Associate.
<i>Physiological Chemistry</i>	{ J. J. ABEL, M. D., Professor. T. B. ALDRICH, Ph. D., Instructor.
<i>Pharmacology and Toxicology</i>	{ J. J. ABEL, M. D., Professor. A. C. CRAWFORD, M. D., Assistant.
<i>Pathology and Bacteriology</i>	{ W. H. WELCH, M. D., LL. D., Professor. SIMON FLEXNER, M. D., Associate Professor. GEORGE BLUMER, M. D., Assistant.
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<i>Diseases of the Nervous System</i>	{ H. M. THOMAS, M. D., Clinical Professor.
<i>Laryngology and Rhinology</i>	{ J. N. MACKENZIE, M. D., Clinical Professor.
<i>Ophthalmology and Otology</i>	{ SAMUEL THEOBALD, M. D., Clinical Professor. R. L. RANDOLPH, M. D., Associate.
<i>Dermatology</i>	{ J. W. LORD, M. D., Associate. T. C. GILCHRIST, M. D., Associate.
<i>History and Literature of Medicine</i>	{ J. S. BILLINGS, M. D., Lecturer.

The Annual Annoucement of the Medical School is now ready, and will be sent on application. Announcements of courses for graduates in medicine will be made later.

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